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# Key to Consciousness: Quantum Gravitation

Ronald D. Pearson B.Sc (Hons)

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## Summary and Authors Background

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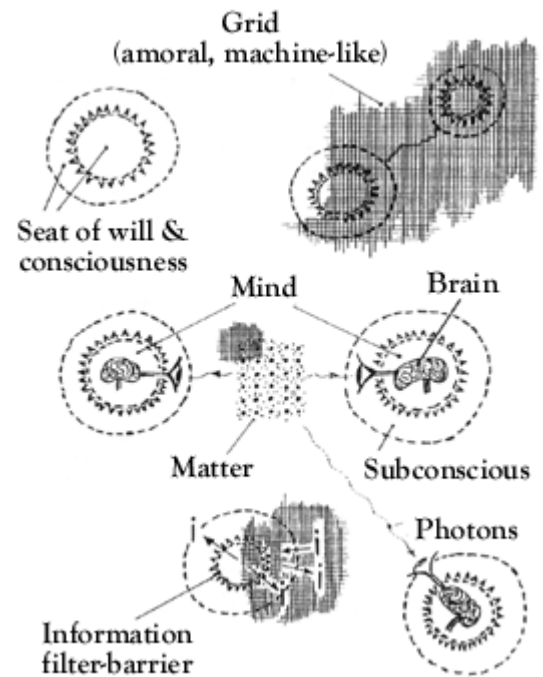
**THE** brain of matter may be a conscious entity or it may not. What this new approach shows, however, is that a primary consciousness lies at the sub-quantum level of reality: in the invisible! Mathematics throws up its fine structure. This created the universe of matter out of its own substance, by the clever use of vibrations, (using quantum waves) in order to provide an environment for mind.

### Summary & Author's Background

The author began as a research officer at the National Gas Turbine Establishment helping to develop the jet engine. The rest of his career was spent as a chartered engineer and academic lecturing in the fields of thermodynamics and fluid mechanics, first at the University of Liverpool and finally at the University of Bath.

After retirement his Newtonian-based disciplines formed the ideal springboard for tackling unresolved problems in physics by looking at them from a new angle. The study was triggered from reading about the "Big Bang", regarded by cosmologists as the standard model describing how the universe began: as an accident in which matter arose so incredibly fine-tuned that biological life-forms could subsequently evolve. The theory seemed unacceptable because this explosion depended upon a negative pressure - which violated common sense (as detailed in the APPENDIX). Other unacceptable features were discovered from a study of mathematical texts and so a fresh start needed to be made: beginning with a new approach to find a solution to the vexed question of quantum gravitation.

As a spin-off it was found that many aspects of the so-called "paranormal" could be explained as real effects as real effects coming now within the orbit of physics. This document summaries the exciting end result.



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Ronald. D. Pearson B.Sc. (Hons) Eng.  
(M.I.Mech.E prior to retirement & switch to physics)  
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## Grand Unification: A Problem?

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**HOW** could gravitation have any possible connection with consciousness? The answer, simply put, is "Everything"! It is not reasonable, as most people would agree, to consider either subject without reference to quantum theory. The latter, though immensely powerful and accurate in its mathematical formalism, is clearly incomplete. It cannot yet bring gravitation into line. At its core is also the unresolved enigma called "wave-particle duality". The minute components of atoms, the "sub-atomic particles", sometimes acts like little billiard balls bouncing off one another but at other times they act as if they are waves occupying extended volumes of space.

Quantum theory, though intimately structured on this apparent anomaly, is quite unable to state what these waves are: whether real or merely abstract. It says they permit all possible outcomes to exist in some kind of limbo state as unresolved "wave-functions" until these are "collapsed into particles" by the act of observation to yield a single reality. So quantum theory already infers the existence of a consciousness generating the illusion of a world built of matter. Bohm(1) suggests that a substratum exists providing "Implicate Order". Professor Penrose(2) discusses computing systems and hints that something analogous could be driving the universe. Quantum theory as it stands, however, is unable to provide a mechanism to explain how its waves arise as well as being unable to say whether they are real or not.

Unfortunately, history has pushed the scientific community into the total rejection of matters deemed "paranormal": they appear to regard them as a threat to the basic laws of their discipline. Indeed, this attitude was highlighted by the eminent physicist, Professor Jahn, Dean of the Faculty of Engineering of the same university, had just been demoted to Associate because he had dared to carry out his research into a forbidden field: psycho-kinesis. Jahn has quite reasonably justified his work by stating that, if the mind could affect instruments, then engineers need to know about it. Wheeler, however, during the "Heretics" TV series, justified the demotion on the grounds that, if proved true then the whole of physics from Newton onwards would be discredited! He had stated, in an earlier program, that their theories could not be wrong: the mathematics was just too beautiful! Should not the validity of the initial assumptions be regarded as the real criterion? Furthermore are scientists justified in postulating that mind is mere brain function so that biological death is the end?

The entrenched position of established physics may soon be overturned, because its deficiencies can now be rectified as spin-off from a new solution. This offers an explanation for gravitation based on a new development in quantum theory. The mathematical logic was published in the proceedings of the Second Scientific Conference on Problems in Space and Time(3) of 1991 and further extended in the proceedings of the Sir Isaac Newton Conference(4) of 1993. It fits the latter to a tee, being based on extensions to Newtonian physics.

To Newton, inertial mass was invariant, corresponding with what we now call "rest mass". However, since light falls like matter, yet is pure energy of motion called "kinetic energy", it is clear that kinetic energy and rest mass need to be considered as made from the same stuff. Hence an object in motion has to be considered as made from a "total energy" which is the arithmetic sum of both constituents. With this extension the main predictions of Special Relativity, including  $E=mc^2$  are paralleled, except that kinetic energy is based on a seemingly "absolute" frame of reference, a feature which Einstein's Special theory of Relativity forbids.

This is crux issue because its denial supported the discrediting of the "ether" of Newton, Crookes, Lodge and other leading scientists. It had been postulated early by Christiaan Huygens as an all-pervading medium needed for the propagation of light. Then nearly a century ago Michelson and Morley carried out their famous experiment using an interferometer to determine the absolute speed of the Earth. They tried to measure differences in the speed of light for two mutually perpendicular directions but their results always came out close to zero. Then with the advent of Special Relativity the fate of the ether seemed sealed forever. Einstein's main postulate stated that light has the same speed for all observers. This fitted in with the experimental finding but was incompatible with the very existence of an Ether.

Unfortunately this incompatibility extends to any kind of background medium, even the so-called, "space" on which quantum theory depends. The latter postulates of a seething mass of "virtual particles" as required for generating the force of nature. They form a substrate, rather like a gas, so it must have fluid properties - totally unlike the concept of a rigid ether.

If now an observer called "A" is at rest in this fluid, light will be observed moving through the fluid. However, Special Relativity, demands that an observer "B" in the space-ship, will see the same speed of light as observer A: it would appear different if, relative to B, light was propagating through a fluid moving past at high speed. This just has to be the basic reason for a remarkable admission made by Professor Stephen Hawking in this popularisation (5). He said on page 11 that Relativity and Quantum theories are, "known to be inconsistent with each other - they cannot both be correct".

So what is the point of still going on trying to match these two so-called "pillars of twentieth century achievement in physics"? (After more than sixty years of effort!)

Fortunately recent developments to be described have shown the most of the remarkable mathematics of relativity theory can be retained, even when its basis assumptions have been drastically modified - as required. It will be shown that a background fluid, to be called the "iether" (meaning "intelligent ether" to distinguish it from other descriptions of an all-permeating background medium which generates matter), has to exist which can satisfy all the apparently conflicting observations just as well as relativity. A quantum-based theory of gravitation now appears, however, which then enables a grand unification of all four forces of Nature to be presented for critical analysis. Such unification has been the "Holy Grail" of physicists for more than a century, but with this solution appears with a bonus: consciousness appears as a property of the iether and paranormal and spiritual aspects are predicted as potentially real effects, not just illusions! Furthermore no change is required to any of the QED or QCD theories, which describe electromagnetism and the strong nuclear force respectively.

It is worth noting that Richard Milton, writing in the Mensa Magazine dated March 1977, describes the conclusions reached by Paul Dirac, Andrea Sakharov, Louis de Broglie and David Bohm: all Nobel Laureates. These famous physicists all pleaded, for a resurrection of the ether as a fluid!

The present theory leads to a solution showing that the iether is essential, having a complex yet fluid structure and being the only thing which really does exist. As will be shown, it is like a neural network with its own built-in power supply. It is capable of acting as a vast memory complex and has all the ingredients needed for its evolution as a conscious entity. According to the new approach, it is this primary consciousness which structures matter. It does so by the intelligent use of quantum waves of real energy which it generates.

## The Theory in a Nutshell

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**THE** gravitational theory, from which a start was made, showed that the iether had to exist rather like a gas of primary particles, the "primaries". They are minute, each being less than 10-20 m in diameter. These are the only true particles in existence and behave according to just two fully established conservation laws: those of energy and momentum. No forces of any kind really exist, except those experienced during the collisions of primaries.

The same logic gives similar predictions at this "sub-quantum" level of reality whether based on Special Relativity, Quantum theory or on Revised Newtonian mechanics. It is hoped this feature will defuse objections, which have so far limited publication.

The gravitational theory threw up a most important feature: only half of all primaries are built from a positive kind of energy. The other half have to be made from a negative kind so that the whole exists in dynamic balance. Without the negative component forces of attraction, like gravitation, cannot be modelled without the violation of the law of conservation of momentum.

Before physicists complain that negative energy states were first proposed by Paul Dirac in the 30's and have since been discarded, it is necessary to justify their re-introduction. All objections raised depended on sub-atomic particles, like electrons, being composed entirely of negative energy. In the new formulation none of these exist in anything but dominantly positive states. "Dominantly" because everything exists as a composite of both with an asymmetry causing only a positive excess to be in control of motion: all objections are therefore made quite irrelevant!

The concept of energy is best understood by considering mechanical work. For the positive kind an object, being the product of that force and the distance moved. An object made from the negative kind would react by accelerating backwards - in a direction opposed to that of the applied force. The mechanical work done must then be negative because the force is applied opposing the direction of motion. The negative kinetic energy gained, however, adds to the negative rest energy, which the object originally comprised, and so the total negative energy increases as the object speeds up. It therefore forms a perfect symmetry with the energy gain of positive matter accelerated to the same speed. Indeed the symmetry is so perfect it is impossible to say whether our bodies are positive or negative. Hence negative energy, or mass, which are one and the same, looks just like the positive kind. We will follow convention and assume our universe is made from dominantly positive energy since it makes no difference to the end result.

It is only when opposites interact that curious effects appear, as will be shown.

A mixture of both kinds could mutually annihilate. For example, 10 positive units added to 10 negative units would yield zero:  $+10 -10 = 0$ . Pure creation, however, is represented by the converse case:  $0 = +10 -10$ . Either way the law of conservation of energy is satisfied, with the net energy remaining zero. Some other condition, however, must apply for control: to specify which case is applicable in given circumstances. This is provided by the additional need to conserve momentum at collision of primaries.

Momentum, denoted by  $p$ , is defined as mass,  $m$ , multiplied by velocity,  $v$ , i.e.:  $p = mv$ . Experience of collisions between objects of like energies have shown that the sum total of momenta, measured in any arbitrary direction, is always the same after any collision as it was at the start. This is what is meant by the term, "conservation of momentum". It follows that the same law needs to apply to the collisions of opposites.

For a positive mass its momentum, represented by an arrow, points in the same direction as the motion. For a negative mass, however, the arrow points backwards! It follows that collision responses between opposites will be very different from those we experience every day.

Let us examine what will happen if a pair of primaries make a head-on collision. Because the negative one has its arrow pointing backwards but its moving in the opposite direction to its partner, both momentum arrows point in the same direction, as illustrated in FIG.1A. They add up. The primaries will be moving at speeds close to that of light and in this condition their energies are directly proportional of their momenta. Since no momentum can be lost the primaries must pass through each other, both retaining their original energy: neither can suffer any energy loss by the collision.

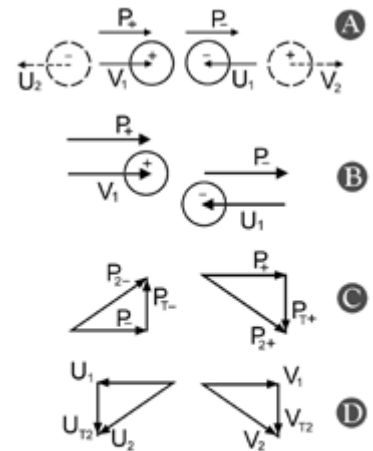
If collisions are not head on, as in B, the same "forward" momenta and energies needs to be conserved. Now, however, a sideways scatter is induced, with extra sideways momentum imparted to each in such manner that they mutually cancel, as shown in FIG.1C. It follows that both have a sideways component of velocity imparted in the same direction as shown at D, contrary to what would be expected from, say, the collision of a pair of billiard balls. The important results, however, is that the corresponding energy gains add to those which pre-existed. Hence the collision of opposites generally results in each primary gaining energy of its own kind in amounts such that the gains, per colliding pair, sum to zero. Repeated collisions will result in growth to a limiting size after which break-up will occur. The result is that primaries breed like opposite sexes, feeding only from the void!

A detailed study, allowing for collisions from all directions and with probabilities of collision proportional to relative velocity, threw up an average gain ratio of 1.18 as shown in the author's book (13). This represents an unimaginably high rate of energy creation, represented by the calculated figure of 1075W/m<sup>3</sup>. This means that if a power unit is assumed equal to the entire to the entire heat and light radiated by our Sun, then millions of Sun's equivalent is being created at every instant in every cubic millimetre of space!

This is almost cancelled, however, by continuous annihilation going on everywhere at the same time so that little net creation can be observed. Just enough remains to account for expansion of the universe. This is because application of the same momentum conservation law shows, that when multiple collisions occur, conditions favouring mutual annihilation appear. Flow cells will develop as all primaries are pushed by the creation going on behind them so that they converge from all directions at common centres as illustrated in FIG.2A. Here momenta cancel, so permitting energies to mutually squeeze each other out of existence. The cylindrical packing of such cells is favoured over spherical packing owing to the asymmetries caused by the cusp-shaped "voids" between cylinders, being smaller than for packed spheres.

Because annihilation takes time a compacted mass remains around each centre consisting of energies in the process of mutual annihilation: primaries are arriving at the outside as fast as they are being removed inside. Consequently filaments of annihilation develop which criss-cross in a random packing order, as shown in FIG.2B. They each form tee-junctions at either end with other filaments.

Junctions can be either open or closed. So by-stable elements have appeared which can act like computer switches - or better still, like the synaptic junctions between the neurones of the human brain!

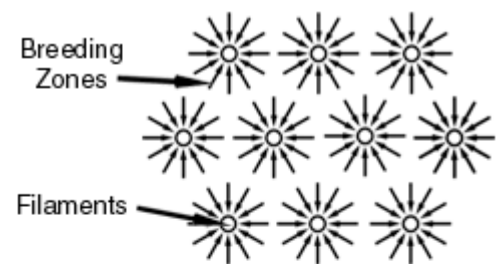


**FIG 1: Collision of Primaries**  
v for velocity +ve energy  
u for velocity -ve energy

This grid-like structure would, however, be quite "dead" unless an asymmetry of rest energy existed between opposite primaries. Positives need to have more than negatives. Then to restore balance, negatives need to have the greater kinetic energy. As a result there will be a slight dominance of negative pressure, exactly as required for producing the gravitational force in the manner to be described!

The asymmetry also enables open junctions to gain an energy imbalance by acting like the rectifiers of AC current for the surrounding energy creation zones. When the subsequently switched to closure, energies will flow and trigger the switching of other junctions. In this way waves of switching action can develop spontaneously, mirroring such effects as alpha waves in our brains.

Indeed, this is all the complex is capable of doing; the production of switching waves: making etheric vibrations. Such a neural-type network will, however, possess the potential to develop memory and learning capability, just like the experimental versions now being explored by scientists such as Hinton(6). Now the developing theory of "Chaos" shows that if a certain potential exists, then ultimately the laws of chance will cause it to develop. So ultimately a machine-like intelligence could evolve able to manipulate its spontaneous wave-action to constructive purpose.



**Fig A. Enlarged Detail of Grid**



**Fig B. Grid Structure**

**Fig 2: Structure of the Ether**

## Creating a Universe

**TO** build sub-atomic particles waves need to be focused. Then the extreme density gradients at the focus will stimulate more collisions of primaries. Higher rates cause increased creation and so density humps will appear in the iether. These humps serve as the particles we observe. The asymmetry amplifies the positive rest energy and the humps are bound by an amplified negative pressure.

To make atoms, however, these humps need to be organised by control waves in the manner described by Schrodinger. The focusing has to be organised with positions chosen at random but with probabilities highest where constructive interference between control waves is greatest. This implies that electrons must be particle sequences joined end to end in time but not in position. After a short period of focusing at one spot the position is shifted to another place. The previous hump then decays to be replaced by another at the new location. In this way the electron can appear to jump about at random to fill a spherical volume of space. It will be wave-confined to produce the "orbital" of the atom: it appears to us, however, as a fuzzy ball of electric charge. A real electromagnetic force is not required for such confinement. If electrons are positioned by wave interference patterns, then electric confinement is rendered unnecessary. It is true that the orbital is produced by waves bent by the electrostatic force in the mathematical derivations, but it is suggested that a similar abstract procedure could be used by the computational abilities of the iether.

The linear accelerated motion of an electron from a negatively charged sphere may be imagined in order to make the mechanism more understandable. The excess of electrons on the surface of the sphere will cause the computing ability of the iether to generate a wave interference pattern spreading outwards. Humps, representing an electron, will be repeatedly generated at places with increasing separation so that the impression of a single accelerating object will be generated. In fact, at each position, each hump will not need to move at all. The effect of motion will appear rather in the way the illusion of motion is generated in a television screen by the illumination of one pixel after another in sequence.

The iether, however, provides a three-dimensional screen on which the moving picture of matter can be generated. We interpret the motion as the acceleration of a single particle under the action of an electric force caused by the electron's charge interfacing with the field. In fact no electric or magnetic force need exist and charge can now be seen as a purely abstract concept! These are illusions generated by the waves. We certainly perceive what appear to be real forces, but our bodies form part of the three dimensional picture, which according to the principles just described, appears more as a semi-virtual reality than something truly real.

The late and famous physicist, Richard Feynman(7), showed that the situation is more complex than this simple description implies. All manner of interactions form and dissolve again before the final end results appear, some even involving time-reversal effects. These are the abstract plans going ahead of real time, suggesting that control waves may also be abstractions: all generated by the vast ietheric computational power available.

A full treatment (15) shows that a perfect explanation for the enigma called "wave-particle duality" has appeared; it seems entirely free from paradox.

A similar argument can be offered to explain the atomic nucleus and the weak force responsible for radioactive decay. Again, for these three forces, no change in existing mathematical logic is involved: it is just the interpretation which has changed.

Only gravitation remains so far unexplained. It appears, however, as a by-product of the same mechanism. As the sub-atomic humps are generated by focused waves, the same waves cross the focus to spread out to infinite distance. As they go they combine their effects with waves arising from other humps to stimulate further creation, causing gentle energy density gradients to arise with densities greatest the closest to concentrations of matter. So buoyancy type forces are produced on distant matter. The humps caused by increased energy creation demand an increased balancing annihilation so that the filaments inside them grow faster than those outside. It is this differential size, acted on by the net negative pressure gradients which cause the force of gravity. FIG.3 illustrates the way sub-atomic humps and gravitation are produced in the manner just described.

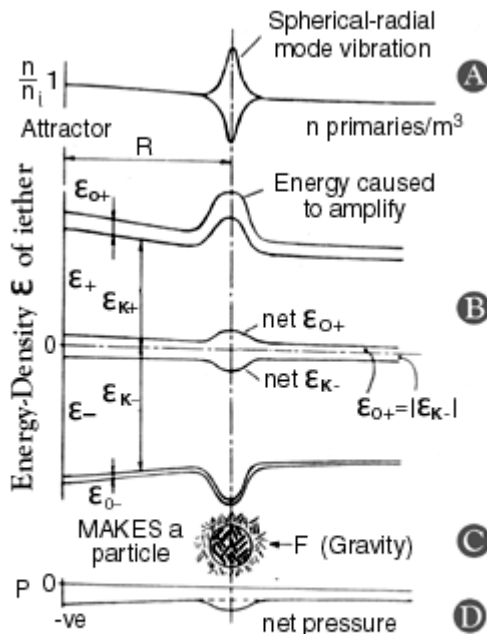
The theory is quantified in the proceedings of the St. Petersburg Conferences (3) and (4). It predicts the same red-shift and the same perihelion advance as General Relativity, due to inertial mass changes with speed and gravitational potential. Then, due to the density variation of the iether, the same doubling of gravitational light deflection and nearly the same "Shapiro Tim Delays" are predicted. So two more achievements of General Relativity are paralleled. It is these density gradients which give rise the same effects as Einstein's concept of curved space-time".

But now a puzzle has arisen. In 1964, prior to his experiments, Shapiro(8) quoted the "Schwarzschild Solution" of General Relativity for his expected result and this is plotted as the dashed line marked "GR" in FIG.4. This was based on the prediction that light slows as it nears the Sun so that on reflection from a planet, such as Venus, the time required for the echo to return will be slightly greater than would otherwise be expected. The author's "Extended Newtonian" prediction backs this up by the close agreement shown by the solid line marked "N". However, after the tests, which used radar beams bounced off the planet, Shapiro(9) quotes an unpublished source which gives the prediction shown by the chain dashed line marked "Shapiro Empirical"? It is this, not the others, which fit the experimental observations! It seemed the chain-dashed line must be just an empirical match, which is why it is so marked.

This author, however, found that if the iether rotated in a vortex motion centred on the Sun, then a further extra time delay would result. This was due to light being helped by the flow on one path but hindered more on the other, resulting in a small net extra "vortex delay". The vortex needed to obey the relation  $v \cdot g = v_E \cdot g_E$  beyond Earth orbit,  $vr = v_E R_E$  to just inside that of Venus and then to the Sun,  $v = 119 - 3310g_e(r/R_s)$  km/s.

Added to curve N, a fair match with the chain curve of FIG.4 is produced. (The tangential velocity of the iether is  $v$  and  $r$  is the distance from the Sun, with suffix E for "Earth".)

Such a vortex can bring into the line the apparent inconsistency of two early observations, the Michelson Morley null interferometer result and the stellar aberration observed by the astronomer Bradley. The former indicated that the earth had zero speed whilst the latter showed it moved at 30km/s: its orbital about the Sun. It seemed that at last the long-standing



**FIG 3: Creation of a Subatomic Particle by Quantum Waves**



puzzle, which led to the development of relativity theory, had been resolved. The Earth would have no velocity relative to a fluid moving along with it but would be in orbital motion about the Sun relative to any star. A fluid background medium is permitted!

A brilliant mathematician and ardent relativist, John Day M.Sc., has however, for several years been corresponding with this author as a critic, mostly attempting to make a convert to relativity theory. He has proved the most valued critic, helping sometimes with clever maths to enhance the very theory he was criticising.

On Christmas Eve 1996 a letter arrived showing he had derived the "empirical" curve from a fundamental equation of General Relativity called a "Metric". So this was, after all, not an empirical fit! But the same metric has also given rise to the lower curve GR: so giving two solutions. For example, water can flow in tow ways toward a drain hole. It can have pure radial flow toward the hole or a vortex can develop.

It seems very likely that the chain dashed curve represents a vortex solution from Einstein's mathematics, which somehow is far more accurate than that available from the Extended Newtonian approach.

Finally John Day showed he could obtain almost the identical metric from the Extended Newtonian basis. This seems a major advance. It indicates that the same mathematics is applicable to both theories despite the incompatibility of their initial assumptions! It means the mathematics of relativity can be regained to advantage and yet the incompatibility with any background medium, and therefore with quantum theory, is removed.

An objection raised by John is worth a mention. He said that comets could have retrograde orbits: so disposing of the vortex theory. It does nothing of the sort! Planets are not locked to the iether: both have independent motions but, constrained by the same physical laws, their speeds just happen to coincide. A space-ship in retrograde orbit would simply have a high speed relative to the iether and if it carried a Michaelson-Morley type interferometer large fringe shifts would be observed. This hints at the need for a new experiment!

Another objection he raised is that a vortex would require an impossible cylindrical symmetry. This objection is also readily countered. The problem is that centripetal accelerations will require radial pressure gradients so that axial ones will also develop when vortex speeds reduce with distance from the central plane. Such three dimensional vortices are known, however. It means that, away from this central plane, the ecliptic i.e. the orbit of earth, axial flows will develop together with axial accelerations which adjust to counter the induced axial pressure differentials involved.

Only for the predication of gravitational wave generation does a possible discrepancy arise. A pair of neutron stars are orbiting each other very fast and, as described by Will (10), their orbital period is decreasing at a rate of 76 microseconds per year. This is consistent with an energy loss by gravitational wave generation as predicted by General Relativity. The Extended Newtonian will give the same prediction if gravity propagates at the speed of light. This was Einstein's assumption based on the impossibility of even a message travelling faster than light. This limitation does not apply for the new assumptions and it seems likely that gravity waves could propagate even thousands of times faster. Then no gravity waves could possibly be measured.

It seems that a paradox-free grand unification can now be offered and a new text book (15) detailing this should be available in 1998. It demands that the primary consciousness be in the invisible, a function of the highly structured iether. To produce matter in the manner described demands a deliberate creative act and could only have occurred if the iether evolved a driving will after it first developed a machine-like intelligence.

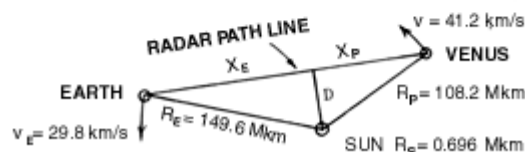
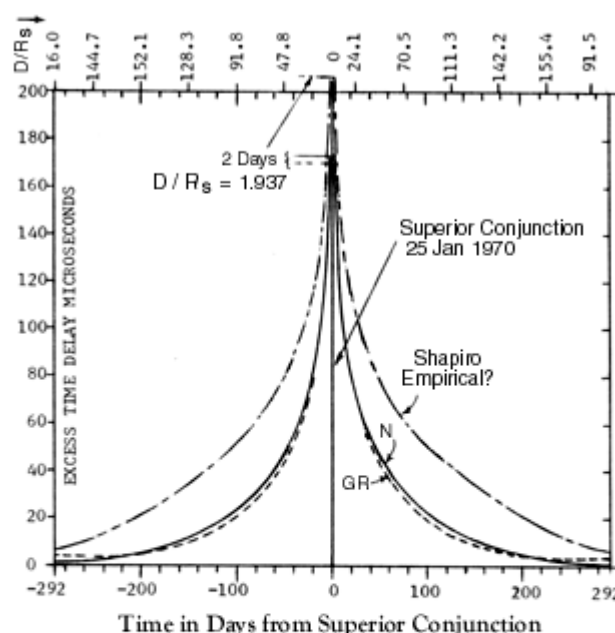


FIG 4: Radar Reflections from Venus to Earth

# Mind and Brain

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**CLEARLY** a picture has been presented which conflicts with the paradigm of established physics, which demands mind being mere brain function. The background intelligence must have needed a reason for creating a universe of matter and possibly others interpenetrating, yet invisible: tuned to different quantum wave frequencies. That reason is not hard to deduce: "supermind" needed a set of meaningful environments for its development and interest. It also had to satisfy a creative urge!

It therefore split itself into other myriad's of sub-minds by programming information filter-barrier around each and created biological machines for them to operate. The brain of matter needed to be built as an interface so that the mind could control organs of the body. In this way sub-minds would be able to interact via sense organs, built from matter, because they would be cut off from direct communication. Worlds of matter would then appear as the only reality, so deceiving our scientists into the belief that this life is all that is.

The front cover illustrates the concept just described. Each sub-mind is shown split into a conscious and sub-conscious part so that only the former can interact with the brain. The latter will remain in contact with all other minds by its connection through the background structure. Most of this is likely to be programmable and machine-like: only relatively minute regions will have developed to the conscious state, so permitting the remainder to be programmed as a machine.

Further development has shown that most so-called "paranormal" phenomena can now be explained. They have the potential to be real effects: not the illusions most scientists fall back upon to explain them away!

For example, out of body experiences must mean that the sub-mind goes temporarily out to register with the brain. Telepathy can arise by permitting controlled leaks to arise in the information filter-barriers of two people. Psycho-kinesis no longer poses a threat to the fundamental basis of physics. Normally incarnate minds are inhibited from direct control of matter but matter is structured and maintained entirely by supermind. Some people able, weakly, to override the inhibition routine.

These and other phenomena are treated in detail by the author (12) and in summary in the booklet (13). We are, after-all, immortal beings who exist for a definite purpose!

## Conclusion

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A grand unification of the four forces and particles of nature has been summarised which, as spin-off, demanded mankind to be spiritually based. The author appreciates that the scenario portrayed may seem indigestible to readers used to thinking of mind as mere brain function. The advantages gained from rejecting this "when you're dead, you're dead" concept seem, however, to be overwhelming. These are therefore listed below as a fitting conclusion: -

1. Reduces the plethora of "elementary particles" such as fermions, quarks, photons and neutrinos, together with virtual "mediators" like "gravitons" to just two, the primaries, which also generate all nature's forces.
2. Solves the vexed question of a huge and totally false "cosmological constant". In the standard "Big Bang" model of creation both space and matter appear together by an "inflation" caused by a combination of an "intrinsic negative pressure of the vacuum" and relativity theory. Unfortunately theorists cannot turn it off so it remains to push the galaxies apart with the acceleration 1050 times too great. An article from Cambridge by Abbott (11), published in the prestigious journal, "Nature", highlights their dilemma, writing, "On the negative side the approach relies on a shaky formalism and many untested assumptions." The statement is also made that the theory is part of the Hawking Coleman programme: showing it to be fully approved.

The new creation mechanism of breeding primaries eliminates the difficulty entirely. Matter could be programmed in the manner of replicating computer viruses. The replication routine, if arranged to cut off at some specified number of generations, would produce an inflationary big bang. Alternatively, matter could be replicating everywhere to yield continuous expansion, similar to Hoyle's ideas.

3. Wave-particle duality is provided with a plausible interpretation which arises spontaneously as a result of the mathematical logic. A mechanism generates the wave.

4. A "Grand Unified Theory" emerges which is virtually paradox-free. Gravitation is integrated with quantum theory and gives the right predictions.

5. The difficulties arising from paranormal experiences are resolved by extending physics to bring them within its orbit. The author's books (12) and (13) provide details of the way these problems are resolved, predicting them to have the potential of being real effects.

6. It provides a framework which can support the main tenets of religious belief, so offering the possibility of integration with physics to mutual advantage.

7. Evolution and creationist scenarios become integrated and no longer appear at variance with each other. The matter-system was deliberately created to allow biological life-forms to evolve.

8. Would people who know they have a soul to nurture dare to commit crime? This is a final question physicists might well consider: false paradigms could be blocking the way to spiritual awareness.

An experiment of Michelson-Morley type needs to be mounted in a fast-moving space rocket. If the Extended Newtonian theory is correct, then fringe shifts should appear consistent with its speed relative to the ether.

What a British triumph it would be if the amateur group called "Aspire" flew this in their next series. They aim for a speed of 5,000 mph. And this would give adequate resolution.

A more satisfactory trial would use one of the British "Skylark" rockets which regularly carry experiments into space on sub-orbital flights. The cost is about £10,000 per experiment.

## Additional Notes: The "Big-Bang" and Special Relativity

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### Experimental Proof that Special Relativity is Flawed

An interferometer experiment by Brillet & Hall (19) using two lasers, one fixed and one fitted to a rotating table, showed that the centre of the Earth appeared to have zero absolute speed to unprecedented accuracy. However, a 17Hz frequency signal rotated with the table. This baffled the authors: they called it a, "persistent anomaly".

Dr. Aspden (20), however, showed this was due to a mirror which, also fitted to the rotating table, could explain the effect only if the surface of the earth had an absolute speed. The angle of reflection of the laser beam, rotating with the mirror, differed from that of incidence in direct proportion to the component of Earth absolute velocity normal to the mirror and this was cycling. It gave a prediction which agreed, to within 3%, with value calculated from the spin of the earth about its polar axis.

This is perfect evidence, coupled with the Shapiro Time Delay, for the existence of a fluid ether moving with the Earth in a vortex motion centred on the Sun. It completely destroys the postulates on which special relativity rests!

### Further Thoughts on the Big Bang Theory

Alan Guth (12) gives mathematical detail for his inflationary theory showing that, for the special case of so-called "flat" space, Newtonian theory can be used throughout. Since general relativity can be ignored one objection made on page 22 is withdrawn.

However, there is another objection. The negative pressure could only be produced by cohesive forces, so demanding the existence of binding particles built of negative energy. This adds an extra term to equation (3), obtained by investigating the radial force on a elemental cone of height R with vertex at the centre of the sphere of fluid of radius R. Then, with V replaced by  $R^{3/4}$  in (3), the acceleration a is:

$$a = F/m = (80/3) G\rho R/c^2 + 3c^2 P/(\rho R)$$

When  $P = -\rho$  the 2nd term means a binding force exists. However, the repulsive effect predicted (1st term) arose as an inversion of the attractive Newtonian gravitational force, without considering any mechanism to produce this force! It is inadmissible to use this equation blind as it has been. In fact only the binding force is possible: there is nothing left to produce the repulsion (ignoring bredding collisions of course).

In fact  $P = -\rho/3$  when the negative and positive values of  $\rho$  are in balance.

### New Advance in the Continuous Creation Alternative

Further analysis has shown that the acceleration phase, given on page 23, does not persist indefinitely. A mathematical solution has appeared, whose predictions are consistent with the observations initiated by Hubble. Now all object can move, each at constant speed, from the beginning of time, but they start with a range of speeds from 0 to c. It shows that there has to be a lower limit for the rate of net energy creation. Whatever permissible rate is chosen, however, in the far future the energy densities of the ether must rise remorselessly until the liquidus state is reached.

### New Ideas for Critical Experiments

#### Experiment 1

Ref. 24 shows that an orbiting probe to be flown by NASA sometime during the year 2000 and containing an interferometer should give large fringe shifts corresponding to orbital speed: not the null results expected to help confirm the theory of relativity.

#### Experiment 2

A quartz crystal clock (about 30 MHz operating frequency) paced against an atomic clock will gain 1.3 microseconds from 6AM to 6PM and lose the same to 6AM next day in repeating daily cycles. (This result would falsify the assumptions of relativity & support the revised Newtonian). Explained in:

25. Pearson, R.D. B.Sc (Eng) & Day, J.W.R. M.Sc's in Math, Phys & Eng: Three predictions from Quantum Gravity: (2nd. Class SAE plus 2, 1st. class stamp)

## Appendix: The "Big-Bang"?

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**THE** only publications in scientific journals, achieved in thirteen years of sustained effort, have so far been limited to three articles in Russian conference proceedings. Since no assessor has ever found a flaw in the logic this state of affairs raises puzzling questions. The approach cannot be so outrageous because it is already being used as reference texts. Two books, published in 1996, relied heavily on this author's books (12) and (13). These are the books by Alan Watts's (16) (who coined the name "nuether") and the one by Connelly (17).

I was permitted a 25 minute presentation at the 20th International Conference of the Society for Psychical Research on 1st. September 1996 and was accorded an enthusiastic response from members. But even that body refuses to publish any of the subject matter in their journal, despite its relevance and despite the lack of any satisfactory alternative so far gracing their pages. It is as if the Establishment physicists, who insist that mind is mere brain function, have taken charge to protect their own corner.

I also found, to my great surprise, that a physicist, Dr Bernard Carr, had organised their conference and he supplied information to explain my failure in communication. He said I was well known in cosmology circles: as a MAVERICK!

I thought I was helping!

Let us explore examples of reasoning to find what is wrong. It seems best to begin at the point which first triggered an interest in this subject: an article written by Professor Tryon which appeared in New Scientist on March 8th 1984. Its title was "What made the World".

This suggested that gravitational potential energy was negative and so could balance the positive mass-energy of the universe. Then the whole could have arisen "Ex-Nihilo". Yet this potential energy was measured from infinity merely because this was the convention. Clearly creation was a special case which did not admit of such a choice and the mass-energy would still exist, at infinity, where the potential energy was zero. Effectively the constant of integration had been ignored: the only place where no work against gravity had been done was at the point of creation. Then this potential energy appeared positive: it could not be negative at all. After several journals alerted had rejected this critique without a reason, a correspondence with the writer and physicist and supplied further information about the Big Bang devised by Alan Guth. Suddenly Davies refused even to speak on the telephone, appearing to be totally embarrassed. However, this information combined with a fuller treatment by Novikov (18), concerning the way an "intrinsic negative pressure of the vacuum" is still being used to power the "Big Bang", will now be studied.

The energy density of space  $e$  had to be huge to explain nature's forces but, at the same time, it had to be zero, it goes, otherwise space could expand. This was because an energy input  $e\Delta V$  is need to increase its volume by amount  $\Delta V$ . Somehow this energy requirement needed cancellation by another process. The only other process available was energy derived from the effect of pressure.

Hence  $e\Delta V$  needs to be balanced by the mechanical work done by vacuum pressure  $P$ : which is;  $P(\text{Area} \times \text{distance}) = P\Delta V$ . So:

$$e\Delta V + P\Delta V = 0: \text{ So } P = -e \quad (1)$$

An equation for density  $J$  from General Relativity is:

$$Jc^2 = e + 3P: \text{ Using(1): } J = -2 \frac{e}{c^2} \quad (2)$$

But a force is needed to power the Big Bang and General Relativity says things fall without a force: so substitute in Mewton's equation (left hand side (LHS) below) which does specify a force  $F$ :

$$F = \frac{-GJm}{R^2} : \text{ So: } F = \frac{2JeVm}{c^2 R^2} \quad (3)$$

$V$  is the volume of a sphere of space of density  $J$  having a radius  $R$ . On its surface, the mass  $m$  is situated to feel force  $F$ .  $G$  is the gravitational constant. The negative signs cancel so that a positive force appears: just right to give the explosion for

powering the creative Big Bang.

There are no mistakes in the algebra and this is the basis of the Big Bang accepted for decades, so we are justified in accepting the end result, are we not?

Take a more critical look. First the pressure has no conceivable mechanism for its production. If the particles responsible for it travelled at speeds between zero and that of light then, by adapting the kinetic theory of gases, it is readily shown that  $P = 0$  to  $e/3$ : not  $-e$ !

Next, it is impossible for any pressure to switch a density from positive to negative as (2) demands. This result means the LHS equation is being used outside its range of applicability.

Also the negative pressure of the vacuum assumed would cause implosion: This is simply ignored.

Finally it breaks the rules of logic to substitute from (2) to (3) since General Relativity and Newton's equation stem from incompatible assumptions.

It is not therefore surprising that mathematicians have been stuck so long with their problem of a huge predicted "Cosmological constant" which is entirely false. This problem vanishes as soon as the idea of primaries existing in both positive and negative energy states is accepted because no violent explosion is then postulated to create the universe. Instead, a gentle sustained creation of the iether is predicted. This brings us to consider another difficulty.

The brilliant physicist Sir Fred Hoyle, who worked out intricate aspects of nuclear fusing in the Sun, also proposed his idea of continuous creation. Interstellar gas was continuously being formed by some unknown means and was pushing the galaxies apart. The universe had neither a beginning nor an end and a steady state of continuous expansion existed to infinite distance in all directions. New galaxies were continually condensing out from the interstellar gas, due to gravitational attraction, so that the universe would always appear the same at all times.

This was a rival theory to the Big Bang until astronomical observations ruled it out. It could have been eliminated earlier by the application of conceptual logic. A hollow sphere of gas is imagined in which the inner and outer radii are always kept in constant ratio with one another as it steadily grows. Clearly it cannot move at a constant radial speed: it must be continually accelerating. Hence expansion in a steady state is impossible! Instead the galaxies are now predicted to be receding at speeds proportional to their distance from us: so matching the observations initiated by Hubble just as well as the Big Bang. This is treated fully in the new book (15) in which the iether is considered: not the interstellar gas of Hoyle. This shows that, not only is every hollow spherical shell element in a state of accelerating expansion: the density is always increasing at every point until a limiting condition is reached. This limiting condition, to be called the "liquidus state", will eventually arise when the primaries are jammed close together so that creation and annihilation are in exact balance. Unfortunately there can be no filamentous structure here and so neither mind nor matter could exist there. It is the "Black Hole" condition: quite unlike any black hole described by General Relativity. Consequently the universe cannot be infinite but must exist as a huge ever-growing sphere. It had a beginning but may never end.

I believe I found the reason for the present state of Cosmology-physics on return from the Russian Scientific Conference. On the 31st of October 1991 I presented the mathematics of the quantum gravity theory to the Students Physics Society of Cambridge University. They were most enthusiastic and one said that was something they could really understand: it made sense. There was general agreement on this point. I asked if this meant they found their courses difficult to comprehend. The response was universal: none of it made sense, they said, the mathematics came so thick and fast they just had to accept it without having time to absorb or criticise the material.

If real progress is to be ensured in physics, then the mathematicians need to encourage the cross-fertilisation between disciplines. Nobody can learn everything and if people train predominantly in mathematics they need engineers, like me, who have learned basic principles at the additional level of "conceptual logic". In mathematics the physicists are brilliant, but at least we could stop them tripping over the simple things!

There is another serious consideration. It cannot be long before funding bodies become aware of the situation. They could decide public funding is not being used in an effective way!

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(NOTE: Pearson (12) Tech. Supt. gives **QUANTUM GRAVITATION** theory MATHS (A level)

**NOTE.** 12, 13 and 14 from:- Michael Roll, 28 Westerleigh Rd., Downend, Bristol. BS16 6AH. Prices include p&p in UK only, international needed from customers overseas.